Remarks/Arguments:

Originally submitted claims 1-18 have been cancelled, pending possible filing of a divisional application. The election of Claims 1-14 is, therefore, affirmed. Cancellation of Claims 15- 18 is thus of Claims withdrawn from further consideration in this Application.

Elected Claims 1-14 have been cancelled and new Claims 19 – 30 provided herewith.

Applicants respectfully submit that the new Claims define the invention in terms which are patentably distinguishable over the documents of record herein, including particularly the 3 patents cited by the Examiner.

As defined in new independent Claim 19, the invention is a method of making a circuitized substrate in which a dielectric polymer layer is immersed in a solution which combines both a conductive monomer and a seed material for a predetermined time period, following which the dielectric polymer layer is removed, rinsed and dried, and then plated with a conductive layer using, significantly, electroless plating.

Support is clearly found on page 5 and elsewhere in the Specification (e.g., page 6). The result of this unique process is the formation of a conductive layer with lines having thicknesses as thin as only about 0.001 inch, yet with a peel strength (e.g., about 3.0 to 3.5 p.s.i.) strong enough to prevent peeling under normal conditions. High density circuit formations are thus attainable using the teachings herein.

Further, the invention is able to achieve the above on polytetrafluoroethylene (e.g., Teflon) substrates (Claim 2), this material having several advantages when used in PCB products. (In this regard, Applicants have removed the term "Teflon" from the present Claims, thereby overcoming the Examiner's 35 USC 112 rejection – withdrawal of said rejection is urged.)

Still further, Applicants have taught and claimed the combination of specific monomers with a specific seed material (palladium-tin) for the solution in which the polytetrafluoroethylene substrate is immersed to provide these advantageous results (very thin conductors firmly adhered to the polytetrafluoroethylene), and include the teachings (and claim) that an oxidant may be added to the solution as well, even stipulating specific oxidants for this purpose. Applicants attain the above in one

solution as well, even stipulating specific oxidants for this purpose. Applicants attain the above in one aspect of the invention while using copper as the plated material, copper being the most widely used metal for circuit conductors for many reasons known in the art (e.g., cost and availability).

Applicants have even further claimed the unique teaching of using specific temperatures for the combined solution when the substrate is immersed therein, such temperatures enhancing the surface treatment process as explained. Substrates formed in accordance with these teachings may be aligned with one another and bonded together, thereby forming a thicker, multilayered structure having greater operational capabilities than a single substrate.

In summary, Applicants have taught and now claim a method of making a circuitized substrate which is a significant advancement in the art and is not taught or suggested by the prior art, including the documents cited by the Examiner in the Office Action. These documents have been carefully reviewed.

De Leeuw (5,620,800), cited by Applicants at filing, does not teach or suggest the instantly claimed invention. This patent fails to teach or suggest combining conductive monomers with seed materials as taught by Applicants, and thus inherently fails to suggest immersing dielectric polymer substrates therein. **De Leeuw** fails to also teach electroless plating of his substrates, and thus inherently fails to suggest first withdrawing his substrates from a solution and drying same before such plating may occur. Contrarily, **De Leeuw** specifically teaches away from using electroless plating, as stipulated in column 5, line 41 and column 6, line 64. The rejection based on **De Leeuw** should therefore be withdrawn.

Boyko (6,212,769) also fails to teach or suggest the instantly claimed invention. This patent requires the initial bonding of a copper layer to the substrate and then its (copper layer) removal, allegedly to form a "roughened" substrate surface, which then is apparently capable of being treated with various solutions. Applicants' claimed new and unique method does not require such a procedure. **Boyko** further appears to require two separate solution treatment steps and not one in which a combined solution is used, as taught by Applicants. In column 7, **Boyko** describes a "chemical pretreatment" prior to electroless copper deposition, the first step of this "pretreatment" being a "conditioning step" (line 36) which "facilitates the absorption of the later applied catalyst/activator seed treatment" (lines 37, 38 – emphasis added). In addition to requiring two steps here, this patent also fails to mention using a conductive monomer as said "conditioner", instead mentioning using a "cationic polyacrylamide" (line 40 - emphasis

added). **Boyko**, taken singularly or in combination (especially with **Shelnut**, below), thus fails to teach or suggest to one of ordinary skill in the art the instantly claimed invention and any rejections of Applicants' Claims based thereon should be withdrawn. Such withdrawal is respectfully urged.

Shelnut (6,899,829) also fails to teach or suggest the presently claimed invention. **Shelnut** does not teach a combined solution of a conductive monomer and seed material, nor does this patent describe using electroless plating on a substrate once treated. **Shelnut** also fails to specifically teach treating polytetrafluoroethylene, the specific material in new dependent Applicants' Claim 20. This patent lacks further teachings of Applicants, as do the previous two other documents cited above. **Shelnut,** taken singularly or in combination (especially with **Boyko** above), thus fails to teach or suggest to one of ordinary skill in the art the instantly claimed invention and any rejections of Applicants' Claims based thereon should be withdrawn. Such withdrawal is respectfully urged.

In summation, none of the documents of record in this Application teach the invention as now claimed. Further, none of these documents, combined with one or more of the others of said documents, suggests the invention now claimed. Accordingly, all of the rejections applied in the Office Action have been overcome and withdrawal thereof is urged. Allowance of the Claims (19 – 30) remaining herein is most respectfully requested.

The Application is deemed in condition for allowance, and such action on the part of the Examiner is respectfully urged. Should the Examiner believe, however, that minor differences may remain which, if overcome, will result in allowance of this Application and that said differences may be openly discussed in a telephone conversation, the Examiner is respectfully requested to phone the undersigned to discuss such differences and hopefully resolve same, thereby expediting prosecution of this Application.

Respectfully submitted,

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